EECE202   **NETWORK ANALYSIS I**   **Dr. Charles J. Kim**
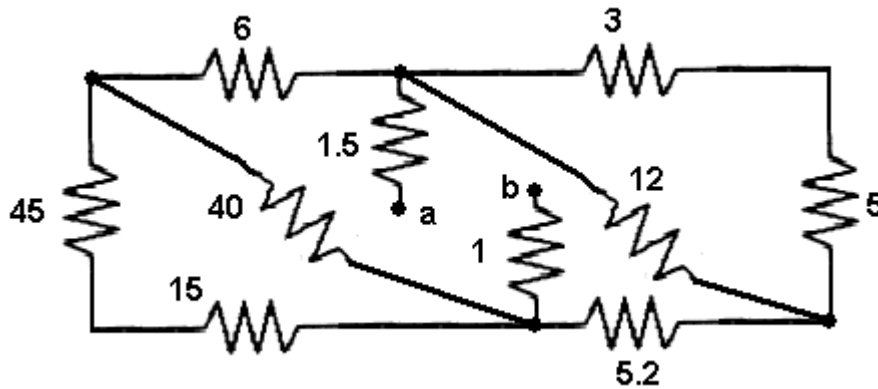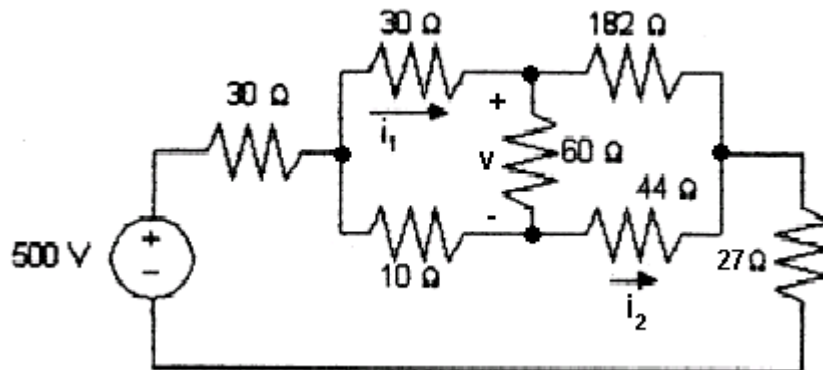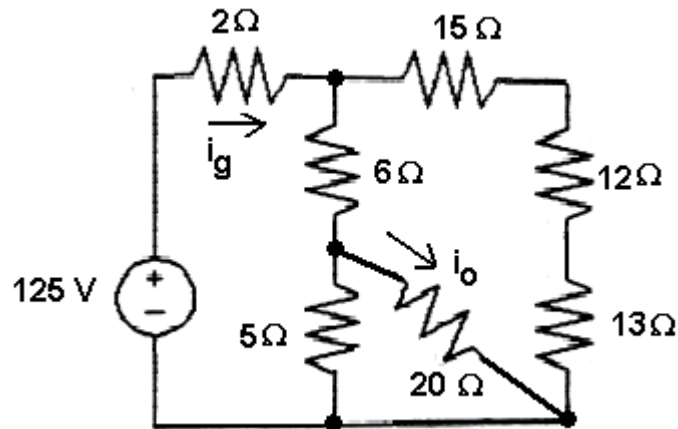
HOMEWORK #1 – Part 2 of 2

NOTE: Show your works

1. Find the equivalent resistance R_{ab}.
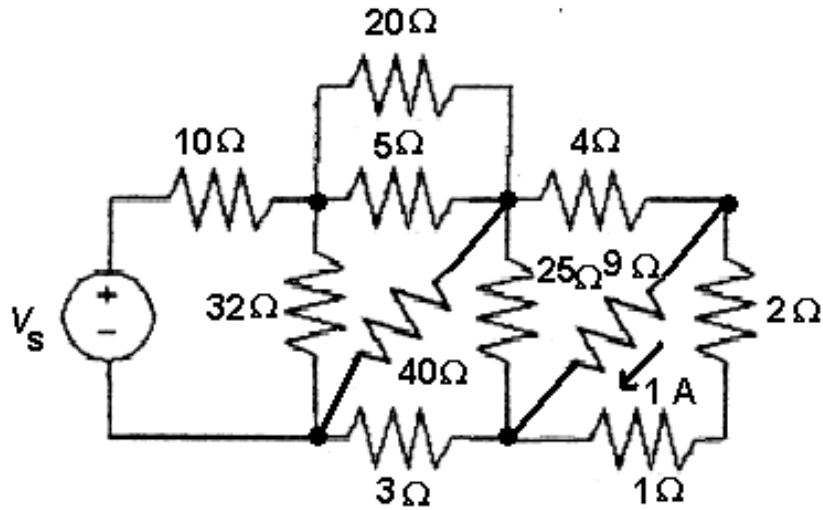

2. For the circuit shown below, find i_1, i_2, and v.


3. Find i_o and i_g in the circuit below.

4. The current through the 9 Ω resistor in the circuit is 1 [A]. Find V_s.

5. A shunt resistor and a 50mV, 1 mA d'Arsonval movement are used to build a (full scale) 10 [A] Ammeter. If a new resistance of 0.015 Ω is places across the terminals of the Ammeter, what is the new full scale of the Ammeter?

6. A 200kΩ is connected from the 100V terminal to the COM terminal of a dual-scale voltmeter as shown below. This modified voltmeter is then used to measure the voltage across the 600 kΩ resister in the circuit of below right. What is the reading of the 300V scale of the meter?
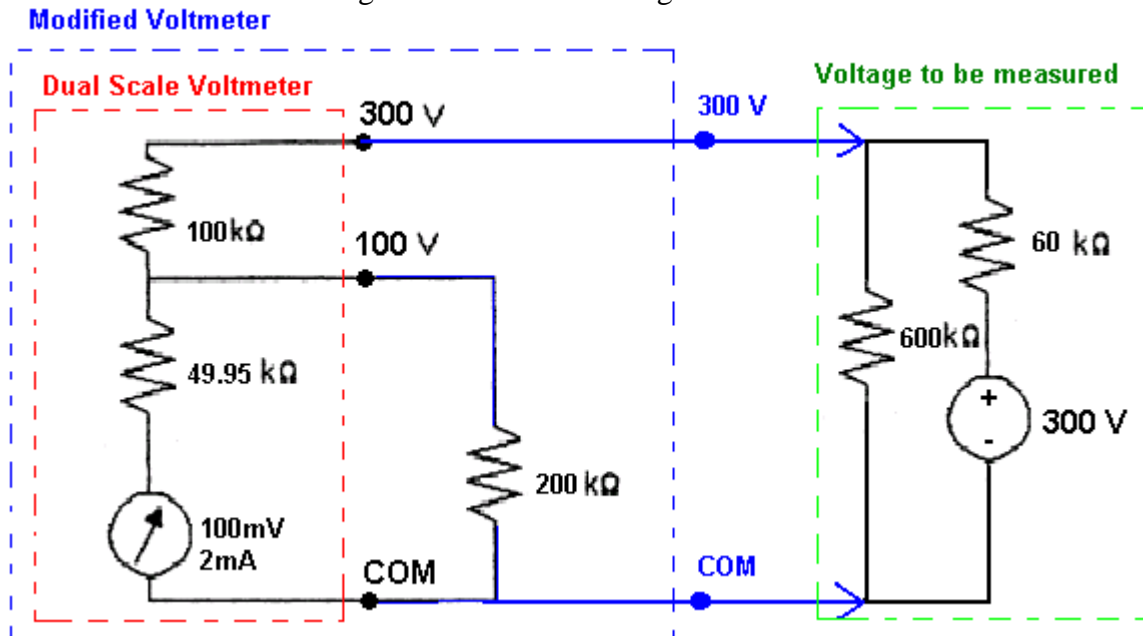
7. Use Delta-to-Y transformation to find the voltages v_1 and v_2 in the circuit below.
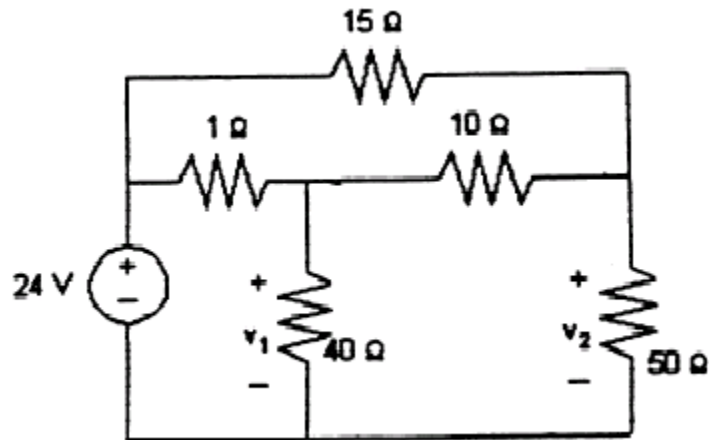
8. The no-load voltage of the voltage-divider circuit is 150 [V]. The smallest load resistor (R_L) that is ever connected to the divider is 60 kΩ. When the load resistor is connected to the divider, the voltage of the load V_o should not drop below 100 [V]. (a) Specify the numerical values of R_1 and R_2. (b) Assuming the power ratings of commercially available resistors are 1/16, 1/8, ¼, 1, and 2 W, what power rating would you specify to the resistors R_1 and R_2?